GENUS LEPTALOE STAPF.

RESTORATION TO ALOE LINN.

By G. W. Reynolds.

(With Plates XIV—XVI).

In *Bot. Mag. t.* 9300 (1933) Stapf erected a new genus LEPTALOE which he founded on *L. albida* from the Saddleback Mountains near Barberton. This species had previously been regarded by Baker as belonging to *Aloe Kraussii* Bak. var. *minor* Bak., and by Berger to *A. myriacantha* (Haw.) Roem. & Schult. var *minor* Berger.

Stapf was correct in according distinct specific rank to the Saddleback plant, and he also correctly included, as its nearest allies, *L. myriacantha*, *L. minima* and *L. parviflora* from South Africa, and *L. Johnstonii*, *L. graminifolia* and *L. caricina* from Tropical Africa.

Berger in *Pflrch.*, Liliac.-Aloin. p. 164 (1908) more correctly regarded them as belonging to the genus Aloe, and he included them in his Section II *Leptoaloe*, a section comprising a heterogeneous mixture which included such divergent morphological forms as *A. minima*, *A. chortolirioides*, *A. Marshallii*, *A. Cooperi*, and *A. Boylei*.

In recent years two further species have been described, *L. Saundersiae* from Zululand, and *L. blyderivierensis* from the Eastern Transvaal. The position now clearly needs reviewing.

The consensus of South African botanical opinion is that *L. albida* and *L. myriacantha* are *not* generically distinct from Aloe, but that they and their nearest allies constitute a natural and distinctive Section of that genus.

The purpose of this paper is, therefore, to restore *L. myriacantha* and allies to genus Aloe, to erect a new Section for the group, and to provide a Key to the species. It is not necessary to describe the species again.

The following is a list of the species involved, together with synonymy and notes :—

(1) **Aloe myriacantha** (Haw.) Roem. & Schult. in *Syst. Veg*. VII 704 (1829) ; Kunth. *Enum. pl.* IV 516 (1843) ; Baker in *Journ Linn. Soc.* XVIII 156 (1880), in Th. Dyer *Fl. Cap.* VI 306 (1896) Schonland in *Rec. Alb. Mus.* I 35 (1903) ; Berger in Engler *Pflrch*

Liliac.-Aloin. 166 (1908).—*Bowiea myriacantha* Haw. in *Phil. Mag.* 122 (1827).—*Leptaloe myriacantha* (Haw.) Stapf. in *Bot. Mag. t.* 9300 (1933).

This species was first described by Haworth as *Bowiea myriacantha* from material sent to Kew by Bowie in 1823. I am indebted to Sir Edward Salisbury, Director of the Royal Botanic Gardens, Kew, for a photograph (herein reproduced) of an unpublished painting at Kew of Bowie's plant. (Plate XIV, fig. 1.).

A. myriacantha has been repeatedly collected along the Zuurberg near Grahamstown, also at Gonubie and Fort Grey in the East London district, while Rev. F. J. Gerstner has collected a form near Richards Bay, Zululand. Flowers March—April. (Plate XIV, fig. 2.).

(2) **A. Johnstonii** Bak. in *Trans. Linn. Soc.* ser. 2, Bot. ii 351 *t.* 63 (1886), in Th. Dyer *Fl. Trop. Af.* VII 456 (1898) ; Berger in Engler *Pflrch.* Liliac.-Aloin. 167 (1908).—*Leptaloe Johnstonii* (Bak.) Stapf in *Bot. Mag. t.* 9300 (1933) ; Christian in *Fl. Pl. S.A.* vol. XX Plate 799 (1940).

I have not seen living plants, but from Mr. Christian's description, this species is one of the largest in this Section. Leaves are rosulate, 30—50cm. long, 4—6mm. broad, inflorescence as tall as the leaves, up to 50cm. high, racemes 6cm. long and broad. Berger states leaves are distichous, but Mr. Christian records " All the material I have seen both living and dried, from different localities, has the leaves rosulate." Mr. Christian (*in. litt.*) states that leaves are not keeled, and flowers are always pale pink. Flowers in March ; occurs in Tanganyika, Kenya and Uganda.

(3) **A. minima** Bak. in Hook. *Icon. pl.* XXV. *t.* 2423 (1895), in *Kew Bull.* 153 (1905), in Th. Dyer *Fl. Cap.* VI 305 (1896) ; Berger in Engler *Pflrch.* Liliac.-Aloin. 166 (1908) ; *non* Medley Wood in *Natal Plants* IV Plate 338 (1906).—*Leptaloe minima* (Bak.) Stapf in *Bot. Mag. t.* 9300 (1933).

Described from a plant collected on the farm " South Downs," about 12 miles west of Estcourt, Weenen County, Natal, *A. minima* has a wide distribution in many parts of Natal and Zululand, and extends into the hilly parts of Swaziland and the South-eastern Transvaal. (Plate XV, fig. 1.).

L. blyderivierensis Groenewald was described from the Drakensberg, near Vaalhoek, along the Blyde River (after which it is named) about 30 miles north of Pilgrims Rest, Eastern Transvaal. It is also found near Pilgrims Rest, and 6 miles north of Graskop, near the Lisbon Falls. I have compared living plants from these localities, with typical *A. minima* in Natal, and found that there is no distinct specific difference between them in inflorescence, racemes, shape and colour of flowers. Both have leaves obtusely keeled, both have no marginal teeth from the middle upwards. In typical *A. minima* leaves are 6—10, rosulate, 4—6mm. broad, while in the Blyde River plants leaves are usually 4—6, distichous or subdistichous, rarely rosulate, 5—6mm. broad, the leaves more fleshy. Racemes and flowers are slightly larger. These plants cannot be upheld as specifically distinct, and are therefore reduced to varietal rank.

(3*a*) **A. minima** Bak. var. **blyderivierensis** (Groen.) Reynolds. *Comb. nov.—Leptaloe blyderivierensis* Groenewald in *Fl. Pl. S.A.* vol. XVII, Plate 651 (1938).

Differs from the typical in having leaves 4—6, slightly broader and more fleshy, distichous or sub-distichous, rarely rosulate, racemes and flowers slightly larger, otherwise as in the typical form. Flowers February. (Plate XV, fig. 2.).

Note : Hook. *Icones t.* 2423 (1895) shows the flowers of *A. minima* with straight segment apices and open mouth. In the wild state, the perianth is constricted near mouth, with segment apices slightly spreading, the mouth slightly upturned, but not bi-labiate. Flowers in February.

(4) **A. parviflora** Bak. in *Schinz Beitr. zur Kenntn. der Afr. Fl* XIII in *Bull. Herb. Boiss.* 2. ser. n8, 785 (1901) ; Berger in Engler *Pflrch.* Liliac.-Aloin. 165 (1908) ; Engler et Drude *Veget. Erde.* IX II p. 320 *t.* 218 (1908).—*Leptaloe parviflora* (Bak.) Stapf in *Bot. Mag. t.* 9300 (1933).

Engler and Drude's figure is identical with Berger's, and depicts a plant with flat lorate-linear leaves distinctly muricate 6—8mm. wide, with flowers 8mm, pale rose. Type locality is near Pinetown, Natal. Date not stated, but probably flowers in February. (Text-fig. 1.).

I have searched near Pinetown in vain for this species, and it does not appear to have been collected again. There also appears to be no material of this species in South African Herbaria. According to Berger, *A. parviflora* is well separated from its allies with its muricate leaves, and 8mm. pale rose flowers. Leaves appear to be broader above, gradually narrowing low down.

(5) **A. albida** (Stapf) Reynolds. *Comb. nov.—Aloe Kraussii*

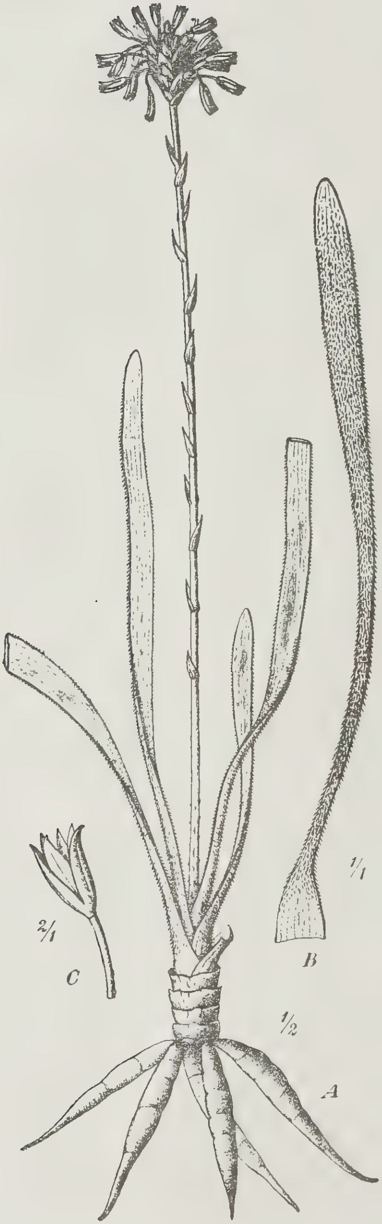

Fig. 55. *Aloe parviflora* Bak. *A* Habitus.
B Folium. *C* Perigonium. (Icon. orig.)

Text-fig. 1.

A. parviflora Bak.

Reproduction of Berger's figure in Engler *Pflrch.* Liliac.-Aloin., p. 165 (1908).

Bak. var. *minor* Bak. in Th. Dyer *Fl. Cap.* VI 306 (1896) ;—*A. myriacantha* Schonl. in *Rec. Alb. Mus.* I, 34 (1903) *non* Roem & Schult. ; *A. myriacantha* (Haw.) Roem & Schult. var. *minor* Berger in Engler *Pflrch.* Liliac.-Aloin. 167 (1908) ;—*Leptaloe albida* Stapf in *Bot. Mag. t.* 9300 (1933).

This charming and distinctive little species occurs in several localities in the mountains south of Barberton, Eastern Transvaal. It has been collected along the top of the Saddleback, and on top of Emlembe Mountain near the Swaziland Border, while I have personally observed it on eastern, southern and western slopes of the Cableway Angle Station mountain, all at altitudes of 5,000 feet and more, in the mist belt. (Plate XVI, fig. 1.).

Mr. J. N. Thorncroft has found plants near Elephants Head (Saddleback) growing in grey-green moss, increasing and forming tufted groups, but the form most typical of the species is solitary plants, with rigid leaves sub-erect to erect.

(6) **A. Saundersiae** (Reynl.) Reynolds *Comb. nov.*—*Leptaloe Saundersiae* Reynl. in *Journ. S.A. Bot.* vol. II, p. 124 Plate XVIII (July 1936).—*Aloe minima* Medley Wood in *Natal Plants* IV. Plate 338. (1906) *non* Bak.

This little Aloe, the smallest known, occurs in large numbers along the top of the mountain to the north of Nkandhla Forest, and about 9 miles South of Nkandhla village, Zululand. It has also been collected by Mr. E. Schelpe Jun. 40 miles south-west of Lowlands, Natal.

At the Nkandhla locality, mostly solitary plants are found among tufts of grass, leaves being 3—5cm. long spreading almost on the ground, with inflorescence 15cm. tall, flowers 10—12mm., pinkish-vinaceous, the mouth trigonous, not bi-labiate. In sheltered protected positions, and especially if cultivated in moist shady positions, leaves reach 20cm. in length, with inflorescence 25cm. tall. It differs from its nearest ally *A. albida* in having narrower spreading leaves, slenderer peduncle, and shorter flowers with mouth regular. Flowers in March. (Plate XVI, fig. 2.).

(7) **A. graminifolia** Berger in Engler *Bot. Jahrb.* XXXVIII 84 (1905), in Engler *Pflrch.* Liliac.-Aloin, 166 (1908).—*Leptaloe graminifolia* (Berger) Stapf in *Bot. Mag. t.* 9300 (1933).

This species is known to me only by description. Berger described it from between Kilimanjaro and Meru, with leaves only 3mm. broad, inflorescence 40cm., racemes ovate-cylindric 6—8cm.

long and about 5cm. broad, pedicels 15—18mm., perianth 15—17mm. long, greenish; the mouth it seems is bi-labiate. Mr. Christian (*in. litt.*) records leaves 10—20cm. long. This species seems to be nearest allied to *A. Saundersiae* in leaves, and to *A. myriacantha* in flowers.

(8) **A. caricina** Berger in Engler *Bot. Jahrb.* XXXVIII 85 (1905), in Engler *Pflrch.* Liliac.-Aloin. 166 (1908).—*Leptaloe caricina* (Berger) Stapf in *Bot. Mag. t.* 9300 (1933).

Berger states that this species is similar to *A. graminifolia* but smaller, and differs with shorter narrower leaves and slenderer peduncle. He regards it as a *species non satis cognita* introduced from the same locality as *A. graminifolia.*

The above species constitute a natural and distinctive group, and require a New Section. Since these species are mostly grassland plants with grasslike leaves, I propose a New Section GRAMINIALOE for them.

The New Section GRAMINIALOE falls after Berger's Sect. I. ALOINELLA, and before his Sect. II LEPTOALOE, which now becomes Sect. III.

Sect. II **GRAMINIALOE** Reynolds. Sect. nov.

Diagnosis: Small acaulescent plants with fusiform roots. Leaves 4—10, narrowly linear, mostly rosulate-multifarious, sometimes distichous. Inflorescence simple. Peduncle slender, sterile bracteate in upper half. Racemes capitate or conico-capitate. Flowers 10—20mm. pedicillate. Perianth 10—20mm. long, basally stipitate, mouth trigonous, or distinctly bi-labiate, usually upturned. Segments free to base. Genitals included or exceedingly shortly exserted.

Species 8, of which 5 from South Africa.

Type Species: *A. myriacantha* (Haw.) R. & S.

Plants in this Section fall naturally into two main groups, those with flowers bi-labiate, and those with regular trigonous slightly upturned mouth. Through usage, the term bi-labiate has been retained, although the mouth is not strictly bi-labiate. The lower segment apices are straight to slightly upcurved, and never distinctly decurved as in Haworthia.

The flowers of *A. Saundersiae* do not fit well, but this species obviously belongs here. The majority have leaves rosulate-multifarious.

Compared with wild plants, those cultivated in green-houses, or in rich shady garden soil and well watered, often modify almost out of recognition. To give measurements of such plants would only be confusing.

In the subjoined Key, the measurements given for the South African species are of average sized plants as I have observed them in their natural habitats.

KEY TO THE SPECIES.

A.—PERIANTH MOUTH BI-LABIATE (leaves rosulate).

- (*a*) Leaves 3mm. broad, 10—20cm. long, Perianth 15—17mm., greenish .. .. *A. graminifolia.*
- (*b*) Leaves 2—4mm. broad, 10—15cm. long, Perianth 18mm., white, greenish tipped .. .. .. *A. albida.*
- (*c*) Leaves 4—8mm. broad, 25—30mm. long, Perianth 20mm., dull-pinkish .. .. *A. myriacantha.*
- (*d*) Leaves 4—6mm. broad, about 40cm. long, Perianth 20mm., dull-pink .. .. *A. Johnstonii.*

B.—PERIANTH MOUTH REGULAR (not bi-labiate).

- (1) *Leaves 6—10, rosulate-multifarious.*
  - (*a*) Leaves 3mm. broad, 4—8cm. long, Perianth 10—12mm., pinkish-vinaceous .. .. *A. Saundersiae.*
  - (*b*) Leaves 4—6mm. broad, 25—35cm. long, Perianth 10mm. Corinthian-pink .. .. *A. minima.*
- (2) *Leaves distichous.*
  - (*a*) Leaves 4, 6—8mm. broad, flat, muricate, Perianth 8mm. pale-rose. (The only species with leaves muricate) .. .. *A. parviflora.*
  - (*b*) Leaves 4—6—8, 5—6mm. broad, 25—30cm. long, Perianth 12mm., flesh-pink .. .. *A. minima* var. *blyderivierensis.*